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## **How has genetics altered our understanding on low back pain: implications for its treatment**

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Low back pain is one of the most common disorders seen in general, orthopaedic and rheumatological practice. While there are many causes, one of the most common is degenerative disc disease. This has traditionally been thought of as a degenerative condition with ageing and spinal loading being major aetiological factors. However, recent epidemiological and twins studies would suggest a major genetic component.

Over the past 10 years, we have collected the HKU degenerative disc disease cohort, which consists of 3500 population based subjects between 18 and 55, and of Southern Chinese origin. All individuals are characterized clinically and by MRI, and blood samples obtained for DNA isolation.

Using this unique database, we have demonstrated a number of novel genetic risk factors that predispose our population to disc degeneration. We were also able to demonstrate a significant relationship between degenerative disc disease and low back pain, as well as some unusual patterns of disc degeneration with relevance on the aetiology of degeneration. The talk will discuss these in detail, and how they have altered our understanding of low back pain, and therefore the ways that we should be treating them, with particular emphasis on novel diagnostic methods and biological therapies.